

1 2. (New) The backplane as set forth in Claim 1 wherein said low tier that is capable of
2 aggregate traffic rates of up to approximately two gigabits per second comprises:
3 a low tier bus comprising a switching architecture that (1) allows a circuit board card
4 on an input side of a connection to transmit data to a circuit-board card on an output side of said
5 connection, and that (2) allows a circuit board card on an output side of a connection to receive data
6 from a circuit board on an input side of said connection.

1 3. (New) The backplane as set forth in Claim 2 wherein said low tier bus supports one
2 of: packet based traffic, unicast traffic, multicast traffic, and broadcast traffic.

1 4. (New) The backplane as set forth in Claim 2 wherein said low tier bus supports
2 asynchronous transfer mode traffic.

1 5. (New) The backplane as set forth in Claim 4 wherein said low tier bus wraps
2 asynchronous transfer mode cells with a header to allow said low tier bus to switch cell based traffic
3 according to a connection-map on each circuit board card connected to said low tier bus.

1 6. (New) The backplane as set forth in Claim 2 wherein said low tier bus comprises two
2 (2) parallel busses, each of which comprises a thirty two (32) bit data path.

1 7. (New) The backplane as set forth in Claim 2 wherein said low tier bus operates at a
2 clock rate equal to one half of a clock rate of said backplane.

1 8. (New) The backplane as set forth in Claim 7 wherein said low tier bus clock rate is
2 32.768 MHz.

1 9. (New) The backplane as set forth in Claim 2 comprising a redundant clock reference
2 for said low tier bus.

1 10. (New) For use in association with devices such as processors and modems used in
2 wireless and wireline access systems, a backplane comprising:
3 a high tier that is capable of aggregate traffic rates of up to approximately twenty
4 gigabits per second.

1 11. (New) The backplane as set forth in Claim 10 wherein said high tier that is capable
2 of aggregate traffic rates of up to approximately twenty gigabits per second comprises:
3 a high tier bus; and
4 at least two switch matrix circuit board cards coupled to said high tier bus.

1 12. (New) The backplane as set forth in Claim 11 wherein said high tier bus comprises:
2 high speed serial links coupled to said at least two switch matrix circuit board cards
3 and coupled to circuit board cards capable of sending and receiving high speed data traffic.

1 13. (New) The backplane as set forth in Claim 12 wherein said high speed serial links
2 comprise:
3 point-to-point serial links comprising differential pairs for both a transmit path and
4 a receive path.

1 14. (New) The backplane as set forth in Claim 13 wherein said high speed serial links
2 operate at a clock rate equal to a clock rate of said backplane.

1 15. (New) The backplane as set forth in Claim 14 wherein said high speed serial link
2 clock rate is 65.536 MHz.

1 16. (New) The backplane as set forth in Claim 14 comprising a high speed serial link
2 serial/de-serial device that multiplies said high speed serial link clock rate by a factor of twenty (20),
3 and wherein each high speed serial link is 8B/10B encoded.

1 17. (New) The backplane as set forth in Claim 12 comprising at least two (2) high speed
2 serial links for each interface control processor slot in said backplane.

1 18. (New) The backplane as set forth in Claim 1 further comprising one of: a time
2 division multiplex bus, a communications bus, a common control bus, and a Joint Test Access Group
3 test bus.

1 19. (New) The backplane as set forth in Claim 18 further comprising at least one set of
2 clock and framing resources.